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Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

of

2

**C mplete if Known**

Application Number

Filing Date

**First Named Inventor**

## Art Unit

Examiner Name

Attorney Docket Number

MARK Linneburg

## U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
		US- 5,033,398	7/23/1991	FROC	
		US- 4 770 112	9/1988	Neumeyer	
		US- 2,889,788	6/1959	Van Dorn	
		US- 4 373 455	2/1983	Friggstaad	
		US- 362 598	5/1887	Billups	
		US- 673 135	4/1901	Denny	
		US- 1 328 375	1/1920	Griffice	
		US- 2 159 652	5/1939	Brunner	
		US- 3.752 236	8/1973	Foster	
		US- 4 565 141	1/1986	Kopecky	
		US- 4 473 016	9/1984	Gust	
		US- 4 608 933	9/1986	Wzritt	
		US- 4 685 843	8/1987	Kelm	
		US- 4 711 187	12/1987	Schultz	
		US- 6 405 665	6/18/2002	Henry et al.	
		US- 6 363 871	4/2/2002	Puetz et al.	
		US- 6 178 901	1/30/2001	Anderson	
		US- 6 059 047	5/9/2000	Schimke	

## FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner  
Signature**

Date  
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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Art Unit
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Attorney Docket Number

**Complete if Known**

MARK Linnebur

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Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(Use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				Application Number	
				Filing Date	
				First Named Inventor	MARK Linnebur
				Art Unit	
				Examiner Name	
Sheet	1	of	3	Attorney Docket Number	

[illegible]

Examiner Signature		Date Considered	
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Remarks,

Concerning the Information Disclosure Statement:

Currently, seed boots are being manufactured which attach to a chisel shank, in which a small sweep shovel is attached to the front. Patent 5,033,398 currently covers such a seed boot and manufacturers such as Flexi-Coil and John Deere manufacture similar boots. This type of configuration does accomplish the objective of getting the seed and/or fertilizer in the ground while at the same time tilling the soil. Unfortunately, the seed is placed on firm, compacted soil, called a sweep layer, and is subsequently covered up by loose soil then followed by a presswheel to firm the soil above the seed. This sweep layer is not an ideal seedbed because the roots are inhibited from establishing themselves downward through the sweep layer. Also, with the loose soil left on top and/or adjacent to the seed, the adjacent soil usually dries out beside the seed which in turn attracts moisture away from the seed instead of directing moisture towards the seed. Needless to say, this type of planting operation is inferior to planting the seed inside a narrow groove with loose sidewalls adjacent to the seed similar to most seed boots that do not combine the tilling operation.

In 1987, another type of implement was patented (Patent No. 4,770,112), in which the planting and tilling operations seemed to be adequately combined. The design has a narrow point extending vertically lower than the wings of a sweep shovel in which a narrow groove is formed and then followed behind by the sweep shovel in order to undercut the adjacent soil killing any unwanted grasses or weeds. This invention has some major pitfalls. It is a unique invention that does not attach to any other implements except to the implement as part of the invention and it does not use any other standard, commercially available sweep shovels. Therefore, the farmer must purchase costly new equipment instead of using standard equipment they may already have. The Deere and Company invention also directs the seed sideways which places the seed on the top of the sweep layer instead of into the narrow groove. The groove is formed for the placement of fertilizer below and away from the seed so that more fertilizer can be injected into the soil during this operation than could be done otherwise if the seed and fertilizer were placed (banded) together.

Relatively narrow knives have also been used in agriculture for forming a narrow groove in the soil in which liquid or gaseous fertilizer is injected into the ground. Usually, there is a separate implement that only has knives attached to it and is not suited for tilling the ground at the same

time. In 1979, an invention, Patent No. 4,141,301, was designed to both fertilize and till the ground at the same time but it is not suited for planting and does not use commercially available sweep shovels.

Other patents related to this invention are:

5,033,398	Froc
4,770,112	Neumeyer
2,889,788	Van Dorn
4,373,455	Friggstaad
362,598	Billups
673,135	Denny
1,328,375	Griffice
2,159,652	Brunner
3,752,236	Foster
4,565,141	Kopecky
4,473,016	Gust
4,608,933	Wzritt
4,685,843	Kelm
4,711,187	Schultz
6,405,665	Henry et al.
6,363,871	Puetz et al.
6,178,901	Anderson
6,059,047	Schimke
2,684,617	Johnston
3,854,429	Blair
4,141,301	Coldren